Appendix B.

ABSTRACT OF THE DISCLOSURE (unamended)

Novel peptides are disclosed that may be used as inhibitors of amyloidogenesis, as suppressors of amyloid toxicity, and as therapeutic agents for amyloid-associated diseases such as Alzheimer's disease, Parkinson's Disease, Creutzfeldt-Jakob Disease, Huntington's Disease, and Type II Diabetes. These new β-strand mimics (β-sheet "blockers"), containing $C^{\alpha,\alpha}$-disubstituted amino acids, specifically interact with and block the development of the β-sheet structure of the developing fibrils of amyloid diseases, such as Alzheimer's disease amyloid β-peptide (Aβ). We have discovered that oligomerization of β-sheet structures, including those implicated in amyloid-associated diseases, may be inhibited or even reversed by the presence of extended peptide structures that have only one edge available for hydrogen bonding. Without a second edge that is also available for hydrogen bonding, the extension of a developing β-sheet is blocked by binding to the novel peptides.